SUBJECT: PERSONAL RAPID TRANSIT

ACTION: RECEIVE AND FILE

RECOMMENDATION

Receive and file this report on the comparison of Personal Rapid Transit (PRT) to other modes considered for the Airport Metro Connector project.

ISSUE

The April Planning and Programming Committee approved the recommendation to rename the Metro Green Line to LAX to the Airport Metro Connector and received the Alternatives Analysis (AA) for the Metro Green Line to LAX and the Build alternatives that were recommended to move forward into the environmental analysis. The Build alternatives include: Direct Light Rail Transit (LRT) Branch, Modified LRT Trunk, Circulator Automated People Mover (APM), and Circulator Bus Rapid Transit (BRT) and were based on the evaluation conducted as part of the AA study and consultation with the Los Angeles World Airports (LAWA). Public comment received at the Committee requested that PRT be considered as a modal option. The Committee requested that a report be presented at their May meeting comparing PRT to the other modes being moved forward into the Draft Environmental Impact Statement/Report (DEIS/R).

DISCUSSION

At the beginning of the AA phase, our evaluation included service-proven transit technologies such as LRT, BRT and APM that have been implemented at other airports around the country. There are several technologies that could be classified as an APM that have different operating characteristics and passenger capacities. One such technology is the PRT system, sometimes called “podcars”. What differentiates PRT from standard APM service is that PRT is designed to offer direct, point-to-point travel with no intermediate stops with an emphasis on on-demand, rather than regularly scheduled service. Likened to an automated taxi or horizontal elevator, PRT systems typically involve smaller vehicles that carry up to six or eight passengers per vehicle and may be well suited to situations where demand is not concentrated.
PRT Systems
We identified three PRT systems currently operating in the world, two of which just began operation in the last two years. Built in 1975, the 8.6 mile West Virginia University PRT system circulates passengers across the widely dispersed campus and to downtown Morgantown. The other two systems recently opened for service in Masdar City, Abu Dhabi, United Arab Emirates (November 2010) and for parking garage circulation at Heathrow Airport in London, England (September 2011). Currently, these two recently implemented systems have only a few stations and effectively operate as a low-capacity, on-demand APM system. As these systems have not expanded to serve more stations, the value of point-to-point service with PRT is not yet evident. A summary of these three systems is provided in Attachment A.

The amount of data available to support rigorous transit planning efforts, as is required for developing a regional transit connection to LAX, is still very limited. Key factors for evaluation are capital and operating costs, vehicle and guideway specifications, operating characteristics, maintenance facility requirements, and capacity and operating speeds. In June 2011, we met with ULTra, the company that developed the Heathrow PRT system, to gather information and to discuss what data were available to support evaluation during the AA. We were able to obtain some information from the Heathrow project given that it began operation later that year in September, but much of the data on modern systems are still preliminary with some information proprietary.

One of the key objectives for the Airport Metro Connector project is to provide a reliable, fast, and convenient connection for passengers traveling between LAX and the regional rail network. Because passenger capacity requirements for the Airport Metro Connector may be as high as several thousand passengers per hour, the estimated capacity of the PRT systems (as they are being developed now) may be insufficient to meet the travel demand anticipated. A comparison of operating characteristics, including passenger capacity, among transit modes is provided in Attachment B.

Initial Assessment
With the technical data currently available, PRT (as a lower capacity, on-demand version of APM) has limited applicability for connecting the regional transit system and LAX, the primary market under study for the Airport Metro Connector. PRT may be suitable for smaller travel markets such as connecting a variety of dispersed businesses (i.e. hotels, rental car facilities, parking lots, and office buildings) to the regional transportation system.

NEXT STEPS
We will begin the Draft EIS/R process including conducting scoping meetings this Spring and will continue our coordination with LAWA. It is anticipated that we will return to the Board in Spring/Summer 2013 for selection of the project’s Locally Preferred Alternative. During the environmental process, we will provide updates to the Board at key project milestones.
ATTACHMENTS

A. Personal Rapid Transit Systems in Operation
B. Comparison of Personal Rapid Transit and Other Transit Modes

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Arthur T. Leahy
Chief Executive Officer
## Personal Rapid Transit Systems in Operation

<table>
<thead>
<tr>
<th>System</th>
<th>Location</th>
<th>Vendor</th>
<th>Date of Opening of Service</th>
<th>System Length &amp; Number of Stations</th>
<th>Seating Capacity</th>
<th>Operating Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morgantown PRT</td>
<td>Morgantown, West Virginia</td>
<td>Boeing (no longer in the market)</td>
<td>1975</td>
<td>8.6 miles 5 stations</td>
<td>8 (+ 12 standing)</td>
<td>Circulation on campus and to downtown</td>
</tr>
<tr>
<td>Masdar PRT</td>
<td>Masdar City, Abu Dhabi, United Arab Emirates</td>
<td>2getthere</td>
<td>November 2010</td>
<td>1 mile 2 stations</td>
<td>4 to 6</td>
<td>Circulation in master planned city and university</td>
</tr>
<tr>
<td>Heathrow Pods</td>
<td>London, England</td>
<td>ULTra</td>
<td>September 2011</td>
<td>2.4 miles 3 stations</td>
<td>4</td>
<td>Between an airport terminal and a parking garage</td>
</tr>
</tbody>
</table>
Comparison of Personal Rapid Transit and Other Transit Modes

<table>
<thead>
<tr>
<th>Transit Mode</th>
<th>Maximum Capacity</th>
<th>Operating Environment</th>
<th>Status of Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passengers per Vehicle</td>
<td>Passengers per Train</td>
<td>Operating Speed</td>
</tr>
<tr>
<td>Light Rail Transit</td>
<td>76</td>
<td>228</td>
<td>up to 65mph, less with frequent stations</td>
</tr>
<tr>
<td>Automated People Mover (non-PRT forms)</td>
<td>39</td>
<td>117</td>
<td>up to 50 mph, less with frequent stations</td>
</tr>
<tr>
<td>Bus Rapid Transit</td>
<td>55 - 74</td>
<td>55 - 74</td>
<td>up to 65 mph, less with frequent stations</td>
</tr>
<tr>
<td>Personal Rapid Transit (a lower-capacity, on-demand version of APM)</td>
<td>6</td>
<td>6</td>
<td>up to 25 mph</td>
</tr>
</tbody>
</table>

*Capacity assumes frequencies of:
- One train every 2 ½ minutes for Light Rail Transit and Automated People Mover
- One bus every minute for Bus Rapid Transit
- One pod every 30 seconds for Personal Rapid Transit

** Bus system capacity varies by the size of the bus